

**CLAIMS:**

1. A motor control device comprising:  
an electric voltage command value calculation means for inputting an electric current command value every control cycle, calculating an electric current deviation integrated value by integrating an electric current deviation between the electric current command value and an actual electric current value at a coil of a motor, and calculating an electric voltage command value in accordance with the electric current deviation integrated value;  
a direct current power source portion for outputting a power source electric voltage of a direct current;  
an inverter circuit for outputting a pulse electric voltage generated by switching the power source electric voltage by a switching element to the motor;  
a control means for controlling a switching timing of the switching element based on the electric voltage command value; and  
the electric voltage command value calculation means controls the electric current deviation integrated value not to exceed a saturation electric voltage value, a value according to the maximum value of the electric voltage outputted from the inverter circuit to the motor.

2. The motor control device according to Claim 1, further comprising:  
a boosting circuit for boosting the power source electric voltage outputted from the direct current power source portion to the inverter circuit;  
a boosting circuit control portion for controlling the output electric voltage of the boosting circuit in accordance with a load amount of the motor; and  
the inverter circuit applying a pulse electric voltage generated by switching the output electric voltage of the boosting circuit by the switching element to the motor.

3. The motor control device according to Claim 1, further comprising:

an electric voltage saturation judgment means for judging an electric voltage saturation when the calculated electric voltage command value is greater than the saturation electric voltage value every control cycle;

the electric voltage command calculation means does not perform the integration of an electric current deviation for further increasing the electric current deviation integrated value at the next control cycle when the electric voltage saturation judgment means judges the electric voltage saturation.

4. The motor control device according to Claim 2, further comprising:

an electric voltage saturation judgment means for judging an electric voltage saturation when the calculated electric voltage command value is greater than the saturation electric voltage value every control cycle;

the electric voltage command calculation means does not perform the integration of an electric current deviation for further increasing the electric current deviation integrated value at the next control cycle when the electric voltage saturation judgment means judges the electric voltage saturation.

5. A motor control device according to Claim 1, wherein the electric voltage command value calculation means controls the electric voltage command value by judging whether the absolute value of the electric current deviation integrated value is greater than the saturation electric voltage value.

6. A motor control method comprising a process of:

inputting an electric current command value every control cycle;

calculating an electric current deviation integrated value by integrating an electric current deviation between the electric current command value and an actual electric current value at a coil of a motor;

calculating an electric voltage command value in accordance with the electric current deviation integrated value;

outputting a pulse electric voltage generated by switching a power electric voltage of a direct current by a switching element of an inverter circuit based on the electric voltage command value to the motor; and

controlling the electric current deviation integrated value not exceeding a saturation electric voltage value, a value in accordance with the maximum value of the electric voltage outputted from the inverter circuit to the motor.

7. The motor control method according to Claim 6, wherein a power source electric voltage supplied to the inverter circuit is boosted in accordance with a load amount of the motor.
8. The motor control method according to Claims 6, wherein when the calculated electric voltage command value is greater than the saturation electric voltage value every control cycle to be judged as an electric voltage saturation, the integration of the electric current deviation for further increasing the electric current deviation integration value at the next control cycle is not performed.
9. The motor control method according to Claims 7, wherein when the calculated electric voltage command value is greater than the saturation electric voltage value every control cycle to be judged as an electric voltage saturation, the integration of the electric current deviation for further increasing the electric current deviation integration value at the next control cycle is not performed.